

What is claimed is:

1 1. A system comprising:

2 a component subject to expansion and contraction as a function of
3 temperature, the component comprising a material having a predetermined
4 thermal expansion characteristic over a temperature range;

5 a temperature sensor thermally responsive to the component for sensing
6 a current temperature of the component, wherein the temperature sensor is one
7 of affixable to and integral with the component;

8 a temperature expansion indicator providing a visual indication of
9 temperature versus distance from a reference point on the component to a point
10 along a range of distances from the reference point, said point corresponding to
11 an extent of expansion and contraction of the component according to said
12 thermal expansion characteristic at a given current temperature of the
13 component.

1 2. The system of claim 1, wherein the temperature sensor and the

2 expansion indicator are integrated with the component, such that the
3 temperature sensor provides a visual indication of the current temperature
4 sensed by the temperature sensor in a temperature range, and a distance scale
5 provides an expansion of said component relative to the reference point, in the
6 temperature range.

1 3. The system of claim 1, wherein the temperature sensor comprises

2 an indicator with an indicated position that moves according to the current
3 temperature and is referenced to a distance corresponding to said expansion
4 and contraction as a function of temperature.

1 4. The system of claim 2, wherein the temperature sensor comprises

2 a plurality of indicator zones that are respectively visually activated at threshold
3 temperatures, and wherein the indicator zones are spaced according to the
4 thermal expansion characteristic.

1 5. The system of claim 1, wherein the temperature sensor provides a
2 temperature readout of the current temperature of the component and a
3 distance scale provides a pattern of distance versus temperature according to
4 said thermal expansion characteristic, and wherein the current temperature is
5 referenced to a point on the distance scale.

1 6. The system of claim 5, wherein the readout is connected to a
2 corresponding point on the distance scale by graphic indicia.

1 7. The system of claim 2, wherein the readout includes a numeric
2 indicia by which the current temperature is referenced to a corresponding point
3 on the distance scale.

1 8. The system of claim 4, wherein the temperature indicator zones
2 comprise thermally responsive visually changeable media.

1 9. The system of claim 8, comprising a liquid crystal temperature
2 responsive indicator strip mountable along the range of distances from the
3 reference point and having said indicator zones spaced thereon according to
4 the thermal expansion characteristic.

1 10. The system of claim 8, wherein the component is a siding panel
2 comprising a polymer, the reference point is a reference position on the panel
3 for receiving a fastener, and the range of distances is placed for comparison
4 between an edge of the panel and an edge of butt jointed adjacent panel,
5 whereby the indicator zones determine a gap dimension between the panel and
6 the adjacent panel at the current temperature.

1 11. The system of claim 2, wherein the temperature sensor comprises
2 a plurality of indicator zones that are spaced according to the thermal
3 expansion characteristic and comprise thermally responsive visually

4 changeable media operable to indicate the current temperature by identifying a
5 point representing a corresponding expansion along the distance scale.

1 12. The system of claim 11, wherein the component is a siding panel
2 comprising a polymer, wherein the reference point is a reference position or the
3 panel for receiving a fastener for mounting the panel; and the range of
4 distances is placed for comparison between an edge of the panel and an edge
5 of butt jointed adjacent panel, whereby the indicator zones determine a gap
6 dimension between the panel and the adjacent panel at the current
7 temperature.

1 13. The system of claim 10, wherein the temperature sensor is
2 referenced to a positioning reference point adjacent to the edge of the panel.

1 14. The system of claim 12, wherein the temperature sensor is one of
2 adhesively affixed to the panel temporarily, adhesively affixed to the panel
3 permanently and integrally formed in the panel.

1 15. A siding installation method, comprising
2 providing a first and second building component, one of said components
3 comprising at least one panel characterized by a predetermined expansion
4 characteristic whereby said panel expands and contracts with temperature, said
5 predetermined expansion characteristic causing a variation in distance between
6 a reference point and a comparison point on the panel;
7 determining a current temperature of the panel during one of installation
8 and testing, by measuring said current temperature using a temperature sensor
9 that is one of integral and affixed to at least one of said building components;
10 equating the current temperature to a distance between the reference
11 point and the comparison point at said current temperature;
12 assessing a position of the comparison point relative to the reference
13 point for accommodating the expansion characteristic during subsequent
14 changes in said current temperature.

1 16. The method of claim 15, wherein the comparison point falls in a
2 range of distances from the reference point corresponding to a range of panel
3 temperatures according to said expansion characteristic, and further comprising
4 indicating a point on the range of distances corresponding to the current
5 temperature.

1 17. The method of claim 16, wherein said indicating of the point on
2 the range of distances comprises placing a temperature sensor over the range
3 of distances wherein the temperature sensor has a temperature scale
4 corresponding to a scale of indicator distance that corresponds to the range of
5 distances corresponding to the current temperature sensor.

1 18. The method of claim 17, wherein the temperature sensor
2 comprises a movable indicator having an expansion material for adjusting an
3 indicated position corresponding to the current temperature.

1 19. The method of claim 17, wherein the temperature sensor
2 comprises an array of visible indication points activated to represent the current
3 temperature.

1 20. The method of claim 17, further comprising placing the
2 temperature sensor at a predetermined position at an edge of one of the
3 building components, for indicating a nominal spacing from an edge of an other
4 of said building components, to accommodate said predetermined expansion
5 characteristic.

1 21. The method of claim 16, wherein indicating the point on the range
2 of distances comprises referencing a temperature readout value to a position on
3 a hatch pattern laid out for representing a position versus a temperature.

1 22. An article of manufacture comprising: a siding panel, a
2 temperature sensor, and an array of spacing indicators, wherein the spacing
3 indicators correspond to a position of a point on the siding panel at a distance
4 from a remote reference point, which distance changes with thermal expansion
5 and contraction of the panel, and wherein the spacing indicators are configured
6 for a thermal expansion characteristic of the siding panel at temperatures
7 determined by the temperature sensor.

1 23. The article of claim 22, wherein the temperature sensor and the
2 array of spacing indicators both are one of integral with the siding panel and
3 affixed to the siding panel.

1 24. The article of claim 23, wherein the temperature sensor has at
2 least two temperature indication points, and wherein the temperature indication
3 points are associated by graphic marking with said array of spacing indicators.

1 25. The article of claim 23, wherein the temperature sensor has at
2 least two temperature indication points that are spaced to correspond to the
3 thermal expansion characteristic over a difference between at least two
4 temperatures identified by said at least two temperature indication points, such
5 that the temperature indication points provide said array of spacing indicators.

1 26. The article of claim 23, wherein the temperature sensor and the
2 array of spacing indicators are at different positions spaced apart on said panel.

1 27. The article of claim 26, wherein the temperature sensor is placed
2 at one end of the panel and the array of spacing indicators are placed at an
3 opposite end of the panel, whereby a gap at a joint between two identical said
4 panels can be set by reference to the temperature sensor of one of said panels
5 and the array of spacing indicators of the other of said panels.

1 28. A temperature indicator for a siding panel, comprising:
2 a temperature sensor operable to determine a current panel temperature
3 independently of ambient temperature; and,
4 a graphic scale on the siding panel illustrating a corresponding effect of
5 thermal expansion over differences in temperature, the current panel
6 temperature being identifiable as a position on the graphic scale, wherein the
7 graphic scale is placed and configured to show how closely an edge of the
8 panel can be placed to an adjacent surface while avoiding interference over a
9 range of thermal expansion temperatures.